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Inter-State **PLANTING HANDBOOK**

Proper Planting and Care Insures Success

How to Grow Successfully

IT is our sincere desire that everything we send out shall grow and do well. The final results depend on the care and attention you give to it. So we send you this "Planting Guide" to help you make a success. Please read it carefully.

Nursery Stock is Living Plants

Always remember that nursery stock is alive, living plants. The roots are the vital part. They must not be exposed to the sun, wind or air. Keep them damp and well covered at all times. Never plant when it is freezing.

IF you receive extra copies of this Planting Guide or Catalog, kindly hand them to friends who will appreciate them. **THANK YOU.**

**INTER-STATE
NURSERIES
HAMBURG...IOWA**



SAVE Your INTER-STATE CATALOGS for Future Reference...

IN the winter-spring we send out our General Catalog, offering our complete line of nursery stock and seeds.

In the fall we issue a smaller catalog, in which we feature fall bulbs, roots and plants that will produce beautiful, early spring flowers, such as Daffodils, Tulips, Iris, Peonies, Oriental Poppies, Lilies, etc.

CHANGE OF ADDRESS. If you change your post office address, please notify us, giving the old as well as the new address, as catalogs are not forwarded without additional postage.

If you have not received your spring catalog by February 20th, or the fall bulb catalog by September 30th, drop us a postal card and we will forward another copy to your address.

INDEX

	Page		Page
American Blue Bells...	20	Hyacinths	21
American Shamrock		Hydrangea, Blue.....	11
(Oxalis)	6	Iris	11
Asparagus	6	Lilacs	11
Azaleas	6	Lilies	11, 12
Aztec Tiger Flower....	12	Maples	17
Begonias, Tuberous....	7	Mole Killer.....	19
Birch	17	Mulching	19
Blackberries	6	Muscari	20
Black Walnut.....	6	Narcissus, Paper White	21
Blueberries	6	Number Plants to Acre.	22
Boysenberries	7	Peonies	13
Buddleia	17	Perennials	13
Bulbs, Fall.....	20, 21	Phlox	13
Caladium	7	Pin Oak.....	17
Calla Lilies.....	12	Poplar, Lombardy.....	17
Camassia	20	Poppies, Oriental.....	13
Cannas	7	Primrose	13
Chinese Elm.....	16	Pruning	5, 6, 19
Chionodoxa	20	RA-PID-GRO	24
Chrysanthemums	8	Raspberries	14
Clematis	8	Rhubarb	14
Clotracide	23	Roses	14, 15, 16
Crape Myrtle.....	8	Rose Spray.....	23
Crocus	20	Scillas	20
Currants	8	Shade Trees..	4, 5, 6, 16, 17
Daffodils	20	Shrubs	17, 23
Dahlias	8	Silver Birch.....	17
Delphinium	8	Silver Lace Vines.....	17
Dewberries	9	Snowdrops	21
Distance Apart.....	22	Spraying	23
Dutch Iris.....	20	Strawberries	18
Dwarf Fruit Trees.....	6	Summer King.....	17
Evergreens	9	Summer Lilacs.....	17
Fruit Trees.....	4, 5, 6	Tigridia	12
Gladiolus	9	Tuberous Begonias.....	7
Gooseberries	8	Tulips	21
Grapes	10	Vines	17
Grape Hyacinths.....	20	Walnut, Black.....	6
Hazelnut	11	Watering	19
Healthberry	11	Windbreak	18
Hedging	10	Youngberries	18

Cold Weather Care

In almost all cases Inter-State's nursery stock will reach you in first-class condition and at a good planting time. But, due to sudden weather changes which sometimes take place in the spring from the time a shipment leaves our nursery until the planter receives it, a shipment may reach a customer in stormy weather. If unable to plant for a few days, place the entire shipment in a cool, frost-proof cellar, basement or cave, until ready to plant. It is best to have your nursery stock on hand when ready to plant than to get it late. The early plantings are always most successful.

If the ground is frozen when you get the stock, so you cannot plant, leave the stock in the bale and put in a cool frost-proof place. Be sure the roots are kept moist and covered. You can sprinkle water on the packing material if it gets dry, or you can throw damp gunny sacks over the stock. However, Glads, Dahlias, Lilies, Cannas, all bulbs, should be taken from the shipment and put in paper sack or paper box in a place not too hot nor freezing. Strawberries and perennials should be taken from the bale and put in a box, covering only the roots with damp sand or soil.

If Stock Arrives Dried Out

Occasionally the packages come too close to the hot steam pipes in the mail cars or are delayed at transfer points and become somewhat dried out. In this case, take it from the bale, cut the strings, and bury the stock completely, roots and tops, in moist soil and leave for two or three days. Or if the stock is short like shrubs and roses, you can put it in a tub of water, covering the tops and roots with water for two full days. But strawberries and perennials should have **Only Their Roots** in the water, and leave only twelve hours.

Heeling In

If you cannot plant for several days, then "heel in" the stock. (See illustration below.) Pick out a well drained spot and dig a trench. Open up the packages, cutting the strings, spread out and cover the roots and tops of every plant with six inches or more of moist soil. With tall fruit and shade trees, you need cover only part of the tops. Strawberries and perennials **Should Be Planted at Once**. But if you cannot, then put in a cool frost-proof place in a box, covering only the roots with moist (not wet) sand or soil. But remember this, **It Is Far Better to Plant** than to "heel in." If you leave stock heeled in too long, it starts growing and then when you plant it is set back.



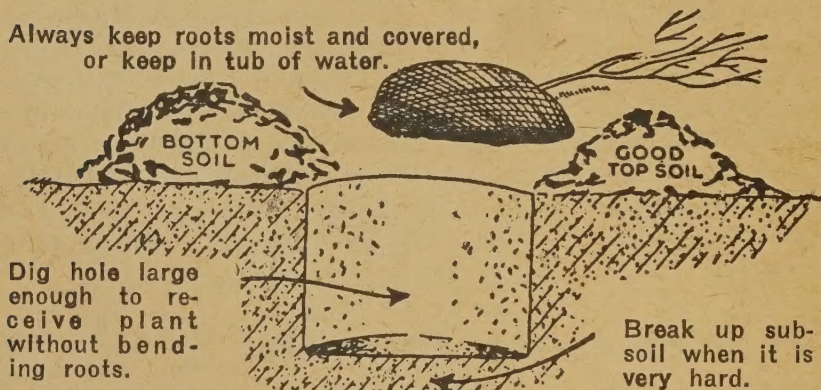
General Planting Instructions

Plant Promptly If the stock is soaked for 12 to 24 hours in a tub of water before planting, it will start quicker. Be sure the roots are completely covered.

Soak the roots over night or a full night and day. Then dig your holes large enough so the roots will not be crowded, putting the good top soil on one side. If the ground is dry, fill the hole full of water at least twice before planting.

Then when the water has all soaked away, go ahead with your planting. Of course, if the ground is moist, then it will not be necessary to put water in the holes before planting. Remember, the most important factor in the life of a plant is plenty of moisture.

Always keep roots moist and covered, or keep in tub of water.



① Set 1½ inches deeper than it stood in nursery.

② Spread out roots naturally.

③ Work fine good top soil under and around roots.

④ Keep putting in dirt, pressing it firmly with hands until hole is half full.



Now go get a plant. With a sharp knife cut off a little from the ends of all roots, cut off all broken roots. A slanting cut on the bottom side is best. (1) Set the plant 1½ inches deeper than it stood in the nursery (you can always tell the ground line because that is where the green top joins the brown root).

(2) Spread out the roots naturally. (3) Work the fine, good top soil under and around the roots with your fingers, shaking the tree a little up and down to work the soil around the roots. (4) Keep putting in the dirt, pressing it firmly with your hands, until the hole is half full, or the roots are covered.

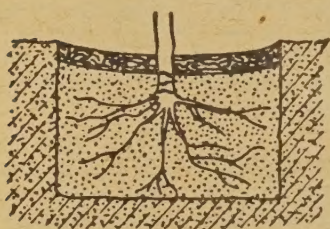
GENERAL PLANTING INSTRUCTIONS—Cont'd

Then tamp firmly with your feet. This tamping is very important because if you leave air pockets around the roots the plants generally die. When hole is two-thirds full tamp again. Then pour in two big buckets of water.

After the water has settled, fill hole almost full of fine dirt but do not tamp again. Leave a little hollow around the plant so the rain will collect there and soak down to the roots.

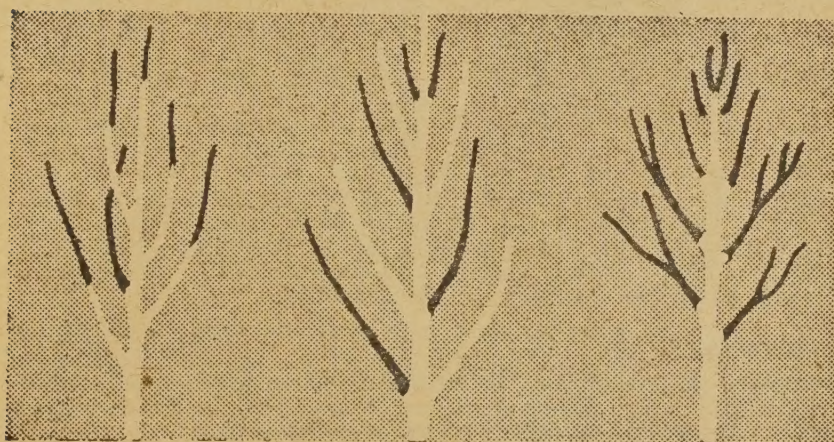
Never use manure so it touches the roots. If your soil is poor and you want to help it, dig the holes real deep, then mix well-rotted manure with the soil and put back in the hole. But there must be six inches of just dirt in the bottom before you put in the plant. The manure and dirt mixture must be **Below the Roots.**

Perhaps the place where you plant is some distance from where the plants are heeled in or soaking in water. In this case, make a "batter" of dirt and water in a hole in the ground or a tub, and dip the roots in this mud. This protects them from the sun, air and wind. But if they have to lay more than a few minutes, then you had better "heel in" again, covering only the roots this time. In other words, always keep in mind that the roots must be kept moist and covered.



Water well when planting and leave saucer-like impression to catch rain.

WE RECOMMEND USING RAPID-GRO. SEE BACK COVER PAGE.



**Apple, Apricot,
Pear, Plum**

Cherry

Peach

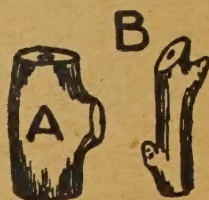
Pruning After you have planted fruit trees, prune them as illustrated. Cut just above the bud which is facing out and not toward the trunk. In the illustration above, the branches and the parts of branches which are marked in black are to be cut off. Do not prune 6-in-1 apple.

Apple, Apricot, Pear and Plum trees, leave three to five branches, spaced on different sides of the trunk. The branches which are left, cut them back to about one-half their length, except the central leader, cut back only one-third its length. The branches of Peach trees should be cut back to just a stub and the main trunk itself cut off to a height of about 3 feet. With Cherry trees, leave three to five branches, spaced evenly around the trunk, and do not cut them back any.

GENERAL PLANTING INSTRUCTIONS—Cont'd

Figure A, shows proper method of removing limb—make a smooth cut close to trunk—do not leave a snag.

Figure B, illustrates proper sloping cut when heading back a branch, close enough, but not too close to the bud.



SHADE TREES. Remove entirely any surplus limbs so that those remaining will form a well balanced head with limbs properly spaced. Head back remaining branches about one-third. Do not prune fall planted trees until spring.

Special Planting Instructions

In the following pages we give some special instructions. But remember that you follow the foregoing General Instructions as to protecting roots, soaking plants before planting, digging big holes, pressing dirt firmly and watering.

Dwarf Fruit Trees Apple and Pear—Plant and prune like common Apple and Pear trees. Stake them for a few years until well established. Plant 10 to 12 feet apart.

American Shamrock (*Oxalis*) These bulbs are not hardy and are to be planted in the late spring, 3 to 4 inches deep, in a sunny location. For a single row border, plant 5 to 6 inches apart. If you want an especially effective border, plant a double row, 6 inches apart each way. Dig them before cold weather in the fall and store like *Gladiolus* bulbs.



Asparagus The soil should be well fertilized before plowing or spading. When ready to plant dig a trench 6 inches deep, set in the plants with crown up and roots spread out. Fill trench only half full at first, then gradually fill in as the plants grow. For commercial use space the plants 18 inches apart in the row,

the rows 4 feet apart, requiring 7,260 plants to the acre. For home use set the plants 2 feet apart each way. Do not cut the tips the first year. Cut down the old tops in the late fall, after freezing, and burn them. Then apply a good top dressing of manure and work into the ground in the spring.

Azaleas Azaleas like acid soil, so when you plant them, fill the hole with top soil from the woods, if possible. Otherwise, mix acid peat moss with the soil. They do best in partial shade and like a thick mulch of oak leaves or peat moss.

Blackberries Plant in the spring, 4 feet apart in rows; rows 7 feet apart and set plants 1½ to 2 inches deeper than they were in the nursery. Press soil firmly around roots and water as mentioned before.

Black Walnut Plant 35 to 40 feet apart and 2 or 3 inches deeper than they were in the nursery. These have long tap roots and require a deep hole. Cut off a half-inch from the end of each root. Plant in good rich soil and tamp the soil firmly around the trees when planting, and water freely.

Blueberries The native Blueberries grow in ordinary garden soil, but mixing some acid Peat Moss with the soil helps them. Plant in groups of three or more, 2 to 3 feet apart. The cultivated named Blueberries grow much taller and require an acid soil. Mix with the dirt, acid Peat Moss, half and half. Plant them in groups 4 to 5 feet apart. They prefer a somewhat moist, rich soil.

Tuberous Begonias It is safer to start the bulbs early in pots in a warm basement. Be sure and do not put them outside until the weather is quite warm and no danger of frost. Do not use pots smaller than six inches in diameter. Use a mixture of sand, peat and loam, covering the bulbs not over $\frac{1}{4}$ to $\frac{1}{2}$ inch. Keep the pots in a warm place, covering them with an old carpet or similar material. Water sparingly until growth has started, but be sure that the bulbs are kept moist and not allowed to dry out. As soon as the growth shows above the soil, take off the covering material and give them light, keeping them warm and moist. When the outside weather is settled and warm, you can transfer them from the pots to the actual location, setting them 2 inches deeper in the bed than they were in the pots. Be sure to plant in a shady location, also give them protection from the wind. Plant them in a well-drained location in a soil which has ample humus and fertility.

If you plant the bulbs outdoors without starting them inside, be sure that you do not plant them until the weather is warm, and also be sure, whether you plant outdoors or in pots, that you plant the tubers with the hollow side up. If you plant the bulbs directly outdoors, cover them $1\frac{1}{2}$ inches and place the bulbs approximately 12 inches apart. At intervals of six weeks, application of well-rotted cow manure will be beneficial. When we say plant in the shade, that does not mean to plant under a big tree, but rather on the shady side of shrubs.

Boysenberry Plant in the spring and be sure the roots are not exposed to the air, sun or wind. A good plan is to carry the plants in a bucket of water. Set the plants 6 to 8 feet apart in the rows and the rows 6 to 8 feet apart. Dig the hole plenty big so that the roots can be spread out naturally. Set the plants so that the crown (where the roots start from) is covered with $1\frac{1}{2}$ inches of fine dirt. If the ground is dry, before planting, fill the holes full of water several times, and after the water has soaked away, then plant. If the weather turns hot and dry, water the plants thoroughly once a week.

The habit of growth of Boysenberry is trailing, like Dewberries. Some prefer to leave them on the ground, making it easier to mulch in sections where winter protection is required. Others prefer to put the vines on a trellis the second summer, like grapes. Have the bottom wire 2 feet from the ground and the top wire 4 to $4\frac{1}{2}$ feet above the ground. Spread out the canes fan shape along the wires as much as you can, making it easier to pick the fruit. When the fruit is picked, the old canes that bore the fruit should be cut back to the ground (just like you prune Raspberries). By that time the new canes, which will produce the fruit the next season, will be several feet long. These canes should be allowed to grow on the ground until the following spring and then put on trellis just before the leaves appear.

In areas south of Oklahoma City, Okla., both the old canes and the new should be cut off at the ground immediately after fruiting. In sections where it gets below zero, we advise covering the canes with straw over winter. Then in spring when you tie up canes to the wires, you can just leave the straw for a summer mulch.

Caladiums Prefer partial shade and plenty of water. Plant in late spring about 18 inches apart, covering root with 2 to 3 inches of good soil. Dig in the fall and store like Cannas.

Cannas Plant in late spring after danger of frost is past, covering with two inches of fine, moist soil, pressed down firmly. Water freely in dry weather. If you want extra large flowers, dig a deep bed, mix well rotted manure with the soil. The top six inches should be nothing but rich dirt. Cannas like a sunny location. Plant eighteen inches apart. After the tops have been killed by frost, dig and store in a cave or cellar, above freezing. Must not be too damp or they will rot, nor too warm. Cover with dry sand.

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Chrysanthemums "Mums." The hardy Chrysanthemum grows well nearly everywhere. It likes rich, well-drained ground where the plants should be set 2 to 3 feet apart and after they have started into growth, the tops should be pinched out to make the plants branch. When the winter comes on, cut the dead stalks down to within a few inches of the ground and leave these cut-off tops right there over the plant all winter as they make a good winter mulch. Divide the clump every two or three years.

Clematis Plant so the collar (where top joins the roots) is two inches below ground level. Spread out the roots fan shaped, working fine, moist soil all in around the roots and pressing firmly. Plant where they are protected from cold winter and hot summer winds, in a well drained spot, as water must not stand around them. A partially shaded location is ideal. When planted in full sun, the roots should be shaded by small plants like petunias, since it is essential to keep the Clematis roots cool and moist. A mulch of peat moss may be used to great advantage.

Crape Myrtle Plant in the spring like any shrub but give it the same winter care that you do your everblooming roses. In northern states, bank up the bush in the late fall, before freezing weather, with 6 to 8 inches of soil. Remove this in the spring after danger of freezing and cut the bush almost down to the ground. It will come up from the roots each spring and bloom on the new growth. In southern states, it is not necessary to protect the plant over winter or cut it back in the spring.

Currants and Gooseberries Plant them 3 to 4 feet apart each way and two inches deeper than they stood in the nursery. They will grow in sun or partial shade. Cut off one-half of the tops after planting.

Dahlias Plant in a well drained, sunny location. When soil is warm and danger of frost is past, dig holes 6 inches deep, 2 feet apart. Lay the tuber on its side with the eye upward. Cover with 3 to 4 inches of dirt, pressing firmly, but be careful and not injure the eye. Fill the hole as the plant grows. Some wood ashes mixed with the dirt is helpful. Also a mulch of grass rakings is good. When the sprouts are 12 to 15 inches high, pinch out the top. This forces out lower branches and makes plant sturdier so the wind will not blow it over. In the fall after the first frosts have killed the tops, dig the tubers when the weather is above freezing. Cut off the tops close down to the roots. Put the roots upside down in a cool place, above freezing, and cover with dry sand. In the spring, divide, being sure to get one good eye with each division. These eyes are on the main stem just above where the tubers join the main stem.

Delphiniums They prefer a sunny location with a rich, deep soil with enough sand to give good drainage. When planting, the soil should be deeply dug, mixing well with some well-rotted manure. If ground is heavy clay, mix in sand and peat besides well-rotted manure. Space plants 1 to 1½ feet apart. Water freely in blooming season. A peat mulch is beneficial. After first crop of flowers are through blooming, cut off the old bloom heads and you will get another crop of flowers. Also, a mixture of bone meal and a little muriate of potash at this time is beneficial.

Dewberries Plant in the spring, 4 feet apart in rows and space rows 7 feet apart. Cover the roots with $1\frac{1}{2}$ to 2 inches of soil.

Evergreens Leave the evergreens in the package in which you receive them until you have the holes dug and are ready to plant. Evergreen roots must never be exposed to the sun or air. If you take them out of the package before planting, be sure and put the roots in a bucket of water or cover with a wet sack. Take the plants from the package and set an inch or two deeper than they were in the nursery. Spread the roots out naturally and press soil firmly. Give Evergreens plenty of water. They can be pruned or sheared each spring, and also during the summer if necessary. Perfectly hardy. Evergreens require no winter protection. Keep dogs away from Evergreens. A can of Dogzoff usually lasts a whole season. It is guaranteed to keep dogs away.

Gladiolus Plant in spring after ground warms up. Plant the large size bulbs 5 to 6 inches deep and 4 to 8 inches apart. Plant the smaller size 4 to 5 inches deep. Glads bloom 10 to 11 weeks after planting. If you plant at intervals of two weeks apart you will have flowers over a longer period. Also the small size bulbs bloom later than the larger bulbs. Glads like a sunny location. They grow everywhere, but of course richer ground will produce larger flowers and taller spikes. If you rub off the outside husk of the bulb it will bloom quicker.

In the fall when the tops begin to die, dig the bulbs. Cut off the old tops. Clean off the dirt. Save the small bulblets. Plant them next spring, $1\frac{1}{2}$ inches deep and they will grow into blooming size bulbs. Store the bulbs in a fairly cool, dry place, above freezing.

Gladiolus are sometimes attacked by small insects known as THRIPS, which ruin flowers and make streaked foliage. Simplest for the home gardener to use is the lysol treatment of bulbs before planting. Use one teaspoonful of lysol to each quart of water, or four tablespoons for three gallons of water. Soak bulbs in this solution for at least three hours but no longer than six. Then plant at once, while the bulbs are still wet.

If Thrips come during the summer, spray with Tartar Emetic (this is a poison, so be careful). Put two ounces ($4\frac{1}{2}$ teaspoonsful) of Tartar Emetic and 8 ounces ($1\frac{2}{3}$ cup) brown sugar in three gallons of water. Spray on just enough to cover the foliage lightly. Repeat if necessary.

K15 DOGZOFF

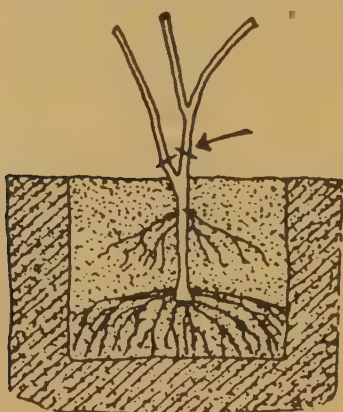
This is guaranteed to keep dogs and other animals away from places they are not wanted. Harmless to humans, non-poisonous, non-inflammable. Easy to use, simple instructions on every can. One can usually lasts a season.

1 Can for 69c



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Grapes There are two sets of roots on most Grape vines. These roots can be trimmed, leaving 10 to 12 inches in length. Do not plant so the roots hang straight down, but spread them out as shown in illustration. The proper depth is to plant so the second bud of the top is at the ground level, then leave another bud and cut off the rest of the top. In other words, you leave two buds above the ground and cut off the balance. There will be no pruning the first summer. The following spring it will be necessary to put up posts and wires, using a number ten wire. Put the first wire about 30 to 36 inches from the ground and the second about 24 inches above the first one. The best young cane is brought up and tied to the wires, all other canes being removed.



Then the next spring (the third year) leave four canes, extending two on each wire, as shown in illustration. These four canes furnish the framework from which the fruiting wood will be produced each year. When removing the canes, always leave little spurs as shown in illustration (A). From these little spurs will come the new canes for next season's fruiting and the old cane will be cut off the winter after it has borne fruit.



Grapes should be pruned in February, selecting a day when the weather is not too cold. Leave fifty to sixty buds to a plant. Remember that the fruit from the grapes is produced from the canes of the previous season's growth.

Hedging As shown in the illustration, dig a trench 10 inches wide with one side even and straight. Set the plants against the straight side.

Most plants should be set 12 inches apart. However, if you plant *Spirea Van Houtte* (Bridal Wreath) and want a tall, natural, untrimmed hedge, then set them 2 to 3 feet apart. After you have finished setting the hedge, then cut back the tops to 4 to 6 inches of the ground level.

When new growth starts and is about 1 to 2 inches long, nip off just the end of the new growth with a sharp knife, which causes it to branch. Do this several times and you will have a hedge bushy from the ground up.



Hazelnut, American Plant in groups about 4 to 5 feet apart, and 2 or 3 inches deeper than they were in the nursery.

Healthberry Plant in spring. It makes a large bush and must be set 12 feet apart each way to keep the plants from growing together. Plant 5 or 6 inches deep. When the fruit commences to ripen, you can cut off a lot of the new growth to make picking of the fruit easier. Do not cut these new canes clear down to the ground, but merely that part which sticks above the fruit so you can get in to the fruit more easily. After the fruit is all picked, cut off the old canes down to the ground, leaving only the new canes that have grown that summer.

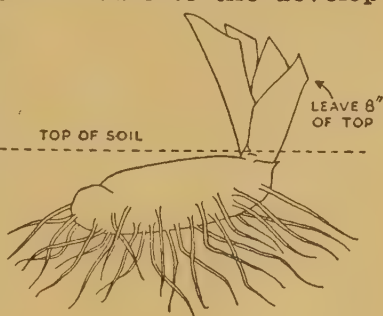
Hydrangea, Blue Plant in spring about 3 feet apart. They prefer a moderately rich, acid soil. When planting, mix the soil with acid Peat Moss, almost half and half. In cold sections give the same winter protection as you do Everblooming Roses. In the spring cut back to live wood just like Roses. To deepen the blue color, water twice a month during the growing season with one tablespoon of Aluminum Sulphate in one gallon of water.

Iris Iris should be planted shallow, in a well-drained location with the rhizomes just barely covered with dirt and the roots extending down into the ground like fingers, as shown in the illustration.

Give Iris a good mulch the first winter to prevent heaving. In spring, remove dead tops.

Heavy, wet soil, over watering, wet seasons, old crowded plants, and possibly the presence of borers, all tend to create conditions favorable to the development of root rot. If the rot has not made much headway, it may be cut out without taking up the roots. Ordinarily, however, it is better to take them up and replant.

Throw away those which are rotted or soft. Sprinkle Cuprocide or Sulphur Dust on the remaining rhizomes.



Lilacs Plant them 4 inches deeper than they were in the nursery and place them 4 to 6 feet apart. Lilacs planted in the fall generally bloom following spring. If you plant in the spring, plant as early as possible. Lilacs like a sweet soil and respond to applications of lime, using 4 quarts of lime to a large bush each year. When planting lilacs do not trim the tops any. After the lilacs have bloomed, cutting off the old blooms will throw more vigor into the new growth. (Cut off just the bloom itself and not the entire blooming branch.)

Lilies Lilies must be planted in well drained soil. Then they are sure to grow, come up every spring, bloom every year. Put two inches of sand under the bulbs when planting them. The bulbs will rot in poorly drained, soggy soil.

Madonna Lilies must be planted in the fall. The other Lilies can be planted either fall or spring.

In the case of fall planting, Lilies should have a light mulch put on them after the ground freezes so as to prevent alternate freezing and thawing.

Practically all Lilies thrive in sun or partial shade. They like to have cool roots, therefore if you can, plant some low-growing perennials or annuals among them so as to shade the roots. Otherwise, use a mulch of peat moss.

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LILIES—Cont'd

Auratum	Philippine
Crimson Beauty	Red Russian
Douglas Ingram	Regal
Dream	Rubrum
Elegans	Star of Oregon
Estate	Sunset
Henryl	Tiger

These Lilies are all hardy and will come up year after year. Plant 6 to 8 inches deep in well drained soil, 12 to 18 inches apart and put an inch or two of sand below each bulb.

In cold states, protect with 3 or 4 inches of straw, grass or hay, to prevent heaving, caused by alternate freezing and thawing.

Lily, Madonna Plant in well drained soil so the top of the bulb is covered with 1½ to 2 inches of dirt. They will make a top growth in the fall, so after the ground is frozen a little, mulch them lightly with straw or excelsior, so as not to smother the green top. The mulch is merely to keep the ground from alternate freezing and thawing.

Red Coral Lily (*Tenulfolium*). Plant 5 inches deep in well drained soil./

Yellow Calla Lily This Lily is not winter hardy. For outdoors, plant in well-drained soil after danger of frost is over. Cover with 2 or 3 inches of soil. They thrive in a partially shaded location. Take up before frost in the fall. Give them a few weeks rest in a cool place. Then you can pot them for winter bloom. Use rich garden soil, placing bulbs near top of pot so the bulbs are covered with just one inch of soil. Water and treat like any house plant.

Tigridia (Aztec Tiger Flower) This is not really a member of the Lily family. They are handled like Glads. They must be planted in the spring and dug in the fall, before freezing weather. Plant them 5 to 6 inches deep and 5 to 6 inches apart.

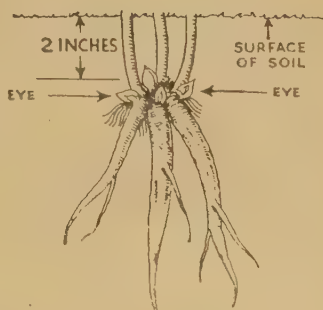
When you dig the bulbs in the fall, you will notice that the bulb has increased into several divisions. Do not, under any circumstances, pull these apart in the fall or during the winter, but just before you replant them in the spring, then you can divide the crowns.

Also, do not plant them in the spring until the ground is thoroughly warmed up. The original home of these bulbs is in Mexico and they like warm weather. If you plant them in cold ground they will rot. If your soil is heavy, plant only 4 inches deep.

Even though the season is rather dry, do not water during the summer until the plants have made a good top growth. Then, the more water the better. After they start blooming, if you will give them plenty of water they will bloom more freely.

The best method of storing the bulbs over the winter is to put them in dry sand and keep in a dry place where they will not freeze.

Peonies Peonies prefer to be in full sun but will grow and bloom if they receive sun at least half the day. But they must not be under trees or large shrubs. Plant in moderately rich, well-drained soil. Set them 3 to 4 feet apart. Cover the eyes with 2 inches of soil as illustrated. Be sure to press the dirt firmly and if dry, water thoroughly. In late fall cut off the old tops and throw away or burn. An occasional light top dressing of barnyard manure is beneficial in the fall, leaving on all winter and work into the ground in the spring. Peonies planted in the fall should have a light mulch over them the first winter.



Perennials Plant them just as soon as you receive them. Plant so the crown (where root and top join) is at ground level if the top has made some growth, but if there is no growth, plant so the crown is covered with $\frac{1}{2}$ inch of soil.

If perennials are planted in the fall, be sure to put a mulch on them, using a mixture of straw and leaves or wild hay, if you can get it, as leaves alone make too tight a mulch and will smother the plants. This mulch is to prevent alternate freezing and thawing, because where plants freeze and then thaw the roots will become loosened from the soil and then they will die. This mulch is very necessary in fall planting, but, of course, is not necessary in spring planting.

Phlox Plant so the crown is $1\frac{1}{2}$ inches below the ground level. If planted in the fall, be sure to put on a mulch after the ground freezes.

If you have not planted the new and improved varieties of Phlox, plant some, because they are very superior to the old varieties. Do not let go to seed.

Phlox is sometimes attacked by red spider, rust or mildew. To control, use any ordinary good garden spray. Apply when the air is still and the foliage is dry.

In the late fall mound up three to four inches of soil over the plants as winter protection. Level off in the spring after danger of freezing is over.

Poppies, Oriental Poppies should be planted in the fall, planted so the crown is covered with 1 inch of fine dirt. Then cover with a handful of excelsior or lawn rakings. This keeps the crown from drying out and the leaves will grow right up through it and will get winter protection. This will help prevent alternate freezing and thawing also. In fact, they must have a slight mulch around the plant to prevent being heaved out during the winter.

Do not permit any water to stand in the crown of the plant. This is apt to rot the plant.

Poppies should be planted on a slight mound so that they have perfect surface drainage. If water stands around the crown, it will rot.

Primrose Plant 6 to 8 inches apart. They like a rather moist, fairly shady location and rich soil. If your soil is poor, enrich it with some old manure. If your soil is rather dry, water it frequently so the plants will not dry out too much.

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Raspberries, Black

Spring planting is best. Plant them so the roots are covered with about 2 inches of dirt. Dig the hole plenty big so that you can spread the roots out. Do not bunch the roots all in a ball, spread them out naturally. Plant them as early as possible, just as soon as the ground is in condition to work. Prune same as red raspberries. Plant 3 to 4 feet apart in the row, the rows 6 to 7 feet apart.

Raspberries, Red

Spring planting is best. Plant so the roots are covered with 4 inches of dirt. Plant 3 to 4 feet apart in the row, the rows 6 to 7 feet apart.

PRUNING. Immediately after fruiting, the old canes should be cut off at the ground, removed from the patch and burned. Then give the patch a thorough cultivation. When the new canes are from 2 to 2½ feet high pinch off the tips, causing the cane to branch out.

Do not pinch off the tips of the new canes of Indian Summer, as they will bear fruit in the fall. The following spring cut back the canes to 30 or 36 inches in height.

Rhubarb

Plant 3 to 4 feet apart with the crown 2 inches below ground level. In the fall mulch with manure and in the spring dig this manure into the ground, as Rhubarb is a strong grower, and the richer the ground, the larger the stalks and the better results you will get. Plant spring or fall.

Roses

Growing Roses is a thrilling pastime. Your success and satisfaction will depend on the common sense and careful effort you put into it. Always plant early in the spring, as soon as the ground is workable. Follow directions carefully and give your Roses natural and careful attention, as any good gardener would.

Select a location where your Roses will get at least five to seven hours of sunlight daily. If you can get protection from the hot summer winds, and hot afternoon sun, this will also help.

Roses must be planted in well-drained, ordinary, good garden soil. Prepare the soil in advance, if possible. Spade the ground deep and work in some well rotted barnyard manure if available.

On arrival of your plants, unpack them and set the roots in a bucket of water for 24 hours; they will start so much quicker. We recommend using RAPID-GRO (see back cover).



Plant so the bud, where green top joins brown root, is 1½ inches below ground level, as shown in illustration. Plant as directed in the main planting paragraph on page 4 except when you put in dirt to fill up hole after water has settled, put

on enough dirt to completely cover the rose tops, just like the gopher mound as shown in illustration. Leave this mound of dirt until new growth starts, which is generally about three weeks. Then rake away the dirt gradually.

Most of our roses are sent out with the tops cut off, ready for planting, but in case you get roses which have long tops on them, remember that after you have planted the roses, there should be only 4 to 6 inches of top above the ground level, and this is covered with dirt, as directed above. In climbing roses, leave 12 to 18 inches of top.



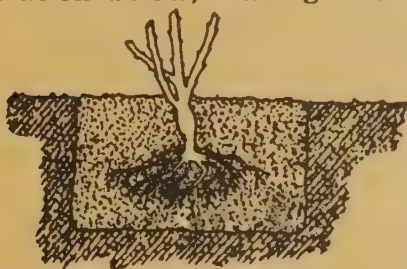
In the late fall, before the severe freezing weather, mound up dirt 6 to 8 inches high around the roses, as shown in the illustration above.

After the ground freezes, give the roses further protection, as shown in the illustration below.



This protection consists of 6 to 8 inches of dirt and then a layer of leaves and straw with boards on the sides to keep them from blowing away. You can cut off the tops which stick above the mulch. Leave this protection on until fairly late in the spring. If you uncover too early you may get the plants frozen, caught by late frosts.

Then, after spring has come and you are safe from freezing weather, cut the plant back as shown in illustration below, leaving about 6 inches of top.



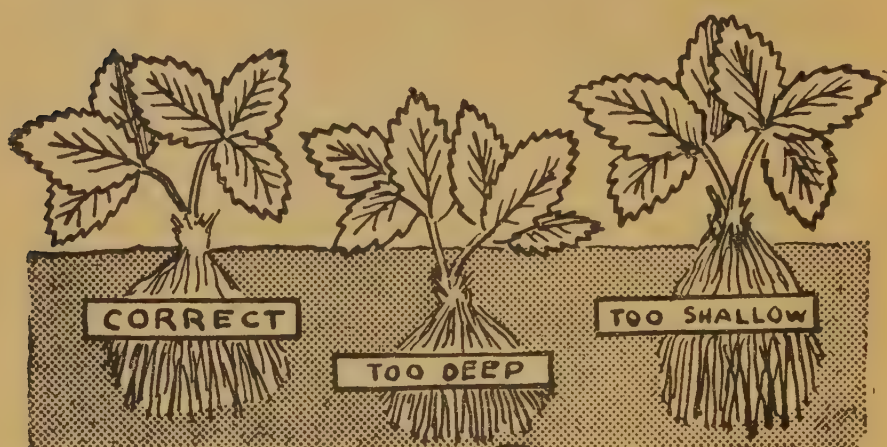
This cutting back applies to all everblooming roses, but does not apply to Hybrid Perpetual roses, such as Frau Karl Druschki, Paul Neyron and Gruss an Teplitz. These are all really shrub type roses and should not be cut back so severely.

Hugonis should be planted with the shrubs as it grows so tall and should be allowed to grow like a shrub. It is hardy and the tops will be alive clear to the tips in the spring, so needs no pruning. In time the bush may get too large, then just cut out entirely some of the old canes.

Of course, there are two schools of rose pruning. Some believe in cutting back severely as we have indicated, leaving less than a foot of growth. There are others who like to leave more growth, as much as two feet or more. This is all right in the South and in sections where the weather is not severe during the winter, but in the Middle West, where we get severe winters, it will be found necessary to cut the roses back severely.

After roses are in leaf, spray regularly with CLOTRACIDE (see back page) or dust them quite frequently with a mixture of nine parts Dusting Sulphur and one part Arsenate of Lead. This will keep them healthy and vigorous and give you lots of bloom. If you are bothered with the Aphis, there are many preparations to kill them, a Nicotine solution, a strong solution of soap suds, Red Arrow, or any other Pyrethrum spray. Be sure to get the spray on the under side of the leaves, as that is where the Aphis generally are.

In planting roses, we recommend setting them 15 to 18 inches apart, although many people like to plant them as close as 12 inches. The Polyanthas or Baby Roses, should be planted close, 12 to 15 inches apart, and the Climbing roses should be planted about 3 feet apart.



Strawberries Plant in early spring. Fall planting is seldom successful. As shown in illustration, plant so the crown (where top joins roots) is just level with the ground. Do not plant with roots all bunched together, but spread them out fan shaped. Be sure and press the dirt firmly against the roots.

Strawberries should be planted early, just as soon as the ground is in condition to work in the spring. In planting, carry the plants with roots in water or carefully wrapped.

For field culture we recommend setting the plants from 15 to 18 inches apart in the rows; spacing the rows $3\frac{1}{2}$ feet apart. Give thorough cultivation and keep free from weeds.

Where space is limited, set them 2 feet apart each way. Plant a new patch every spring and plow under old patch after it has produced two crops of berries.

Do not let your Strawberry bed get too thick with plants. An average of four plants to each square foot is sufficient. When the runners have set this many new plants, cut off the runners. If a patch is too thick with plants, the berries will be much smaller and actually not produce as much fruit as when each plant has more room.

NUMBER OF PLANTS REQUIRED TO THE ACRE.

15 ins. apart in rows, rows $3\frac{1}{2}$ ft. apart, 8,297 plants.

18 ins. apart in rows, rows $3\frac{1}{2}$ ft. apart, 6,914 plants.

Windbreak Chinese Elm makes a very fine windbreak in just a few years. A single row will make a fair windbreak, two rows are much better and three rows make a real windbreak. Set the trees 4 to 6 feet apart in the row and the rows 8 to 10 feet apart. Do not prune off any of the lower limbs but let the trees branch right down to the ground. The inside row should be at least 100 feet away from the building to be protected.

When you set more than one row, plant staggered or zig-zag fashion. In other words, the first and third rows line up even, but the second row is off center.

If you plant only one row, set the trees, 4 feet apart. If you plant two rows, set the trees 6 feet apart and the rows 8 feet apart. If you plant three rows or more (this is best) set the trees 8 feet apart and the rows 10 feet apart.

Youngberry Grow the same as Boysenberries. (See page 7.)

Pruning When cutting off branches and limbs of trees, you will notice there is a shoulder or swelling right where the branch joins the larger limb or trunk. Cut off the branch right at the outer edge of this shoulder, making a smooth, clean cut. If the branch is large, paint over the cut with a pure lead and oil paint. Do not use a ready-mixed paint because it contains turpentine which is injurious to the tree.

How to Prune. Remove all the dead wood, broken branches and, in the case of trees, bad forks just as soon as they appear. A portion of the older wood should be removed each year from shrubs, especially that which is in center of bush. This allows the sunlight to reach entire plant and permits new growth to start. Your finest blooms will always appear on the younger growth. If no pruning is done you will soon have a bush with just a few leaves and flowers on the outside with an abundance of dead branches on the inside. If you have neglected to prune your shrubs as you should have, do not attempt to clean out all the old wood in one year. Do so gradually, taking two or three years to get rid of the old unproductive part of the shrub. By judicious system of thinning out the old wood each year in your shrubs you can maintain healthy, clean looking plants that will give you an abundance of bloom each year.

Winter Mulch Under different paragraphs, we have called your attention to winter mulch. This is very essential to various perennials, lilies and roses. This mulch should not be all leaves alone, unless you can get oak leaves, because leaves pack too tightly.

You can make a mixture of leaves and straw and lawn rakings, or wild hay, or small evergreen boughs. This mulch should be put on after the ground has lightly frozen to prevent alternate thawing and freezing.

Watering Hoe or cultivate frequently, stirring the ground after rain or watering. In dry weather water thoroughly once a week. The best plan is to make a basin around the plant and fill it full of water several times, until the ground is soaked 12 inches or more deep. After the water has soaked away, then fill up the basin with dry dirt.

It is much better to let the water run out of the hose without a nozzle than it is to stand and sprinkle with a nozzle.

The best method of watering that we have tried is to screw a SOIL SOAKER on one end of your garden hose, and turn on the water. SOIL SOAKER is made of porous canvas and comes in four lengths—12, 18, and 30 feet. The water comes out all along this SOIL SOAKER without washing. Being flexible, you can place it among your roses, shrubs, perennials, around large trees, along a bank or on the lawn. It waters without getting the tops of the plants wet, which is very important, as this prevents sun scald. We recommend it highly. It's inexpensive.

GENUINE HASTINGS SOIL-SOAKER

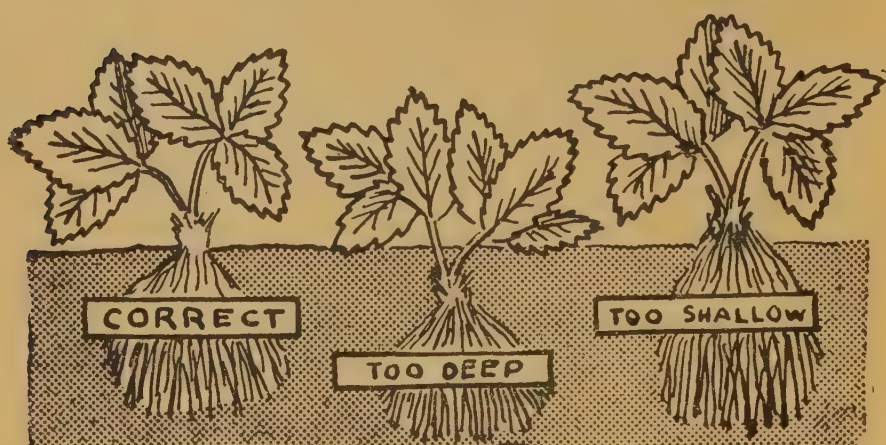
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K12 12 feet long.....Each \$1.40, postpaid

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FALL PLANTED BULBS

The following bulbs must all be planted in the fall. Thoroughly spade the soil and pulverize the dirt finely so there are no clods. If the ground is dry at planting time, be sure to soak it thoroughly after planting. If we do not get good fall rains, repeat this soaking once or twice more before the ground freezes. This is very important because the bulbs will be injured if allowed to freeze up in dry ground.

Do not use fresh manure. Use bone meal or well-rotted manure, mixing it with the soil. Plant as soon as you get the bulbs, except that Tulips should not be planted until the leaves of the shade trees fall (generally the last of October). All bulbs must be planted in well drained soil and be sure to press the dirt firmly around the bulbs, because if you leave air pockets it will seriously injure them. It is a good plan to put an inch of sand below the bulbs.

It is a good plan to put a mulch of old lawn rakings or a mixture of straw and leaves over the bulbs. This mulch must be removed when the weather warms up in the early spring, but do not remove it too early.

If you are bothered by field mice and moles, when planting your bulbs, sprinkle some Naphthalene flakes right on the bulbs when you plant them. (This means not on top of the ground after planting, but right on the bulbs before you cover them with soil.) Another plan, if you have only a small bed, is to sink into the ground, 10 inches deep around the entire bed, ½-inch mesh hardware cloth or 10-inch strips of galvanized metal. Be sure the hardware cloth or metal strips are not above ground level to interfere with lawn mower. Mole Killer (see back page) kills moles.

American Blue Bells, *Muscari* (Grape Hyacinths) Plant 4 inches deep, 3 to 4 inches apart. They bloom real early and are among the finest flowers that grow. Every home should have some. You can plant them under trees, around the shrubs, or in the lawn. They live for many years, coming up each spring without further attention.

Oregon Blue Star (*Camassia*) Plant 4 to 5 inches deep, 8 to 12 inches apart. Last for many years.

Chionodoxa Plant 4 inches deep, 3 to 4 inches apart.

Crocus Plant 4 inches deep, 3 inches apart. Crocus can be planted right out in the lawn, because they come up and bloom early, before you have cut the grass, and by the time it is time to cut the grass they will have died down. They come up year after year without attention.

Daffodils Plant 6 to 8 inches deep and 6 to 8 inches apart. Daffodils can be planted among the shrubs and trees because they come up and bloom so early. Plant in fall as early as you can.

Dutch Iris Plant 5 inches deep, 8 or 9 inches apart, selecting a sunny, well-drained spot. After the ground is frozen a little, mulch with 6 inches of straw or leaves.

Scilla Plant 4 inches deep, 4 to 6 inches apart.

Hyacinths For outdoors, plant the bulbs 6 inches deep and 6 to 8 inches apart. Before the ground freezes put on a heavy mulch of lawn rakings or a mixture of leaves and straw, because Hyacinths must not freeze. If you have never planted Hyacinths outdoors, be sure and try some because there is no other flower which can equal them for fragrance and glorious beauty.

For forcing Hyacinths indoors, plant the bulb in pots so the top of the bulb is one-half inch below the surface of the soil. Water well, and the best way to do this is to set the pot in a pan of water so the water soaks up through the hole in the bottom of the pot. Then set the pot in a cool, dark place for 8 to 10 weeks, watching to see that the dirt does not dry out. In fact, a good plan is to bury the whole pot in moist sand and then it will not dry out.

In 8 to 10 weeks the bulbs will have made a good root growth and also will be putting out a good top. Then bring the pot into a warm room and put a paper sack around the top, keeping off the light. After the new growth is 3 to 4 inches tall, remove the sack and soon you will have lovely flowers.

Snowdrops Plant 3 inches deep, 3 inches apart.

Tulips The bed should be spaded deep, the ground thoroughly pulverized, like making garden. Plant in well-drained rich soil. Plant tulips about 6 inches apart and 8 to 9 inches deep, with the point of the bulb up. Work soil firmly around bulb so there is no "air-pocket" below. If the ground is dry, soak it up good before planting. Plant reasonably late, after leaves begin to fall, so bulbs will not show growth in the fall. Keep in a cool, dark place until planting time.

In a dry spring the bed should be watered to insure taller, stronger stems and larger, more perfect blooms.

Tulips can be left in the ground undisturbed as long as they flower satisfactorily, but when the bulbs begin to give small flowers, dig them in late summer, divide and re-set in a different location in the fall.

Narcissus, Paper White Merely put them in a bowl of water and pebbles and place them in a cool, dark place until the bulbs make a good root growth. Then bring them to the light. Make a new planting every three or four weeks and you can have the beautiful, fragrant, white flowers practically all winter. These are generally considered the easiest of all flowers for winter blooming indoors.

NUMBER OF BULBS REQUIRED FOR PLANTING CIRCULAR BEDS

Diameter of Bed	3 in. apart	4 in. apart	6 in. apart	8 in. apart
3 feet.....	127	95	37	...
4 feet.....	217	127	61	37
5 feet.....	331	225	91	69
6 feet.....	469	271	127	78
7 feet.....	631	410	169	96
8 feet.....	817	469	217	127
10 feet.....	1,261	721	331	190
12 feet.....	1,801	1,027	469	271

FOR AN OVAL BED—Add length and breadth and divide by two. For example, a 10x6 foot oval bed requires as many plants as a round bed 8 feet in diameter.

SQUARE BED—5x5 feet, 100 bulbs, set 6 inches apart each way. 5x10 feet, 200 bulbs, set 6 inches apart each way.

How to Make a Curved Bed

Just take a garden hose and place on the ground. You can make any kind of a curved bed very easily this way.



Suitable Distances for Planting

- Apple, 30 to 40 feet apart.
- Peach, Apricot, Cherries, Plum and Pear, 15 to 20 feet apart.
- Grapes, 8 feet in rows; rows 10 feet apart.
- Currants and Gooseberries, 3 to 4 feet each way.
- Healthberry, 12 feet apart each way.
- Raspberries (Red and Black), 3 to 4 feet apart in row; rows 6 to 7 feet apart.
- Blackberries and Dewberries, 4 feet apart in rows; rows 7 feet apart.
- Boysenberries, 6 to 8 feet apart each way.
- Nectar Berry, 6 to 8 feet apart each way.
- Strawberries, field culture, 18 inches apart in rows; rows 3½ feet apart. Garden culture, 18 to 24 inches apart each way.
- Asparagus, field culture, 1½ feet apart in rows; rows 4 feet apart. Garden culture, 1x2 feet.
- Rhubarb, 3 feet apart in rows; rows 4 feet apart.
- Youngberry, 6 to 8 feet apart each way.
- Shade trees. Give them plenty of space to develop. Large growers, Elm, Maple, Oak, etc., 30 to 50 feet; medium growers, Birch, Willow, etc., 25 to 30 feet.
- Where space is limited, trees and plants may be set a little closer. Where plenty of room is available set far enough apart so your trees and plants can develop properly and give best results.
- FILLERS. Fruit growers often prefer to set their apple trees at least 40 feet apart, with a filler of Peach, Plum or Cherry trees between the rows as the latter do not live as long as apple trees. Small fruits, berries of all kinds, Asparagus and Rhubarb may also be planted between the young orchards, giving you almost immediate revenue from the ground until the fruit trees commence to bear.

Table Showing Number of Plants to Acre

Distance Each Way	No. of Plants	Distance Each Way	No. of Plants
1 ft. apart.....	43,560	13 ft. apart.....	257
2 ft. apart.....	10,890	14 ft. apart.....	222
3 ft. apart.....	4,840	15 ft. apart.....	193
4 ft. apart.....	2,702	16 ft. apart.....	170
5 ft. apart.....	1,742	17 ft. apart.....	150
6 ft. apart.....	1,210	18 ft. apart.....	134
7 ft. apart.....	888	19 ft. apart.....	120
8 ft. apart.....	680	20 ft. apart.....	108
9 ft. apart.....	537	25 ft. apart.....	69
10 ft. apart.....	434	30 ft. apart.....	48
11 ft. apart.....	360	35 ft. apart.....	35
12 ft. apart.....	302	40 ft. apart.....	28

RULE—Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and the product will be the number of square feet for each plant which, divided into the number of feet in an acre (43,560) will give the number of plants or trees to the acre.

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R. F. D. OR
STREET ADDRESS _____

CITY _____

STATE _____

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**be sure you have written your name and address
on the letter and envelope. All members of
the same family please order
under one name.**

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Ship to **Mr.**
Mrs.
Miss _____
(Write Name and Address Plainly. All Members of One Family Please Order Under One Name).

City _____ State _____

Shipping Point (If different from Post Office) _____

[illegible]

[illegible]

Spraying—Fruit Trees Consult your county agent or your State Agricultural College for up-to-date information and bulletins on spraying. They will be glad to send you bulletins free and keep you posted on the best spraying material to use for the control of insect and plant pests. You can obtain the Post Office address of your State Agricultural College from your postmaster.

How to Space Shrubs Do not plant shrubs in a straight line. Plant in easy curves. Put the taller growing shrubs behind with the lower growing in front. Do not plant them too closely together and give the taller growing shrubs more room than the smaller growing. Do not plant too close to the foundation.

CORNERS. For corner planting nothing is more effective than Red Leaf Barberry, Japanese Barberry, Snowberry, Chenaulti or Spirea Anthony Waterer. Fine for planting on a corner to keep people from cutting across the yard. Grows about three feet tall. You could also use the same shrubs to plant in front of your porch, as they are good for foundation planting. Remember, though, that the Red Leaf Barberry should be planted in a sunny location.

DRIVEWAYS. There is almost no limit to the use of shrubs for driveways. There are tall growing, low growing, smooth growing, thorny, almost anything to suit the taste of the planter. We like to see medium tall shrubs along the driveways, with Tulips, Iris or Peonies planted in front. The shrubs should be set at least 3 feet from the edge of the driveway and kept reasonably well pruned for best effect.

FOUNDATION PLANTING. For high foundations plant tall growing shrubs and evergreens. Where the foundation is low, plant low growing shrubs like Spirea Anthony Waterer, Red Leaf Barberry, Japanese Barberry, Spirea Arguta, Snowberry Chenaulti, etc. Low growing shrubs should be planted about 24 inches from the foundation, tall growing shrubs at least 3 feet from foundation.

The present style of landscape planting is to plan your lawn with open center, with mass plantings to the boundary lines. Just as you furnish every portion of your home, just so you should plant every part of the grounds to secure maximum in beauty and enjoyment.

ALL SEASON BLOOMING. To have flowering shrubs in bloom from early spring until fall, plant the following in order named: Forsythia, Spirea Arguta, Almond double flowering, Japan Quince, Tartarian Honeysuckle, Lilacs, Deutzias, Spirea Van Houtte (Bridal Wreath), Snowball, Syringa Virginalis, Weigelas, Hydrangea Hills of Snow, Spirea Anthony Waterer, Snowberry, Butterfly Bush, Buddleia Ile de France, Altheas, Hydrangea P. G.

Clotrocide

**THE COMPLETE SPRAY FOR ROSES.
NO OTHER SPRAY IS NEEDED WHEN
CLOTRACIDE IS USED**

**Convenient to Use. Effective In Results.
Economical in Price.**

Clean healthy foliage is essential to grow good roses. Spray regularly, spray thoroughly, and keep your plants clean and healthy. Clotrocide contains all the necessary chemicals for the control of insects and also fungus diseases such as Black Spot and Mildew.

Complete directions on every package. Guaranteed satisfactory or money refunded.

K150—\$1.50 per package, postpaid. Makes 20 gallons of complete spray.

K151—\$5.75 per package, postpaid. Makes 80 gallons of complete spray.

RA-PID-GRO

A Liquid Plant Food, Guaranteed Satisfactory.

For Better Lawns, Better Shrubs and Trees.
Better Gardens.

K160—	1 pound for.....	\$1.25
K161—	2 pounds for.....	2.35
K162—	5 pounds for.....	4.50
K163—	10 pounds for.....	8.75

All Postpaid.

Here is a product that we would like to have everybody use. When planting, you simply put four level teaspoonsful of RA-PID-GRO in one gallon of water (eight level teaspoonsful in two gallons of water, etc.) Soak the roots of roses for just three minutes. They will start much more quickly and bloom that much sooner. Soak roots of shrubs for three minutes; roots of trees for four minutes; just dip perennial roots for a second or two. Strawberry plant roots are dipped for just a second or two. Raspberry, Blackberry, Boysenberry, Healthberry roots, Grapes, Gooseberries, Currants and Blackberries are dipped for one minute. After dipping, plant right away, keeping all roots protected from sun and wind. When through planting pour the solution around the newly planted stock. Then every two or three weeks use RA-PID-GRO and you will get the very best results. One pound makes 22 gallons of quick-acting fertilizer.

It is marvelous for invigorating lawns. For using on the lawn and large areas, we have a special nozzle. It costs \$1.50 postpaid. It automatically measures out the right amount of RA-PID-GRO. However, you do not need this nozzle for ordinary garden use. You simply put RA-PID-GRO in water in a pail or sprinkling can, then pour it around the plants you wish to fertilize. We realize the soil in most yards is not as fertile as it should be. RA-PID-GRO will overcome this and you will be greatly pleased at the increased growth you get. Try it at our risk. If you are not entirely pleased, your money will be refunded. Instructions on every package.

FORCE'S MOLE KILLER

You simply put the pellets in the runways. The moles like them and eat them and die. That is all there is to it. Keep a supply on hand to use when the mole's runways appear. Guaranteed to work or your money back. Postpaid.

K4	75 Pellets for 50c.
K5	185 Pellets for \$1.00.
K6	875 Pellets for \$3.25.

**INTER-STATE
NURSERIES
HAMBURG...IOWA**

